

REMARKS

The non-final Office Action was issued on pending claims 1-2. Claims 1-2 stand rejected. In this Response, claims 1-2 have been amended, claim 3 has been added and no claims have been cancelled. Thus, claims 1-3 are pending in the application.

Applicant invites the Examiner to call Applicant's Representative to discuss any issues with this application.

Telephone Interview

A discussed during the telephone interview on February 8, 2005, the claims as originally filed were translated into English from the Japanese priority application. Applicant's representative indicated that the claims would be amended to conform to U.S. practice. Accordingly, the amendments to claims 1 and 2 in this Response clarify the claims by placing the claims in proper form according to U.S. practice.

Amended claim 1 more clearly defines that the sliding contact seal structure comprises a shaft member having a sliding contact surface that comes into contact with a seal member and relatively slides with respect to the seal member. Amended claim 1 also more clearly states that the sliding contact surface is defined to have a surface energy of 50 dyne/cm or less for contact with the seal member.

An example of Applicant's invention is shown in Figs. 3 and 4. A sliding contact seal structure has a shaft member (pinion 23) having a sliding contact surface that comes into contact with a seal member (oil seal 29) and relatively slides with respect to the seal member (29). For example, the shaft member (23) has a sliding contact surface that contacts lips (29a) of the seal member (29). The sliding contact surface of the shaft member (23) has a surface energy of 50 dyne/cm or less for contact with the seal member (29).

Amended claim 2 more clearly defines that the seal member has a sliding contact surface which is defined to have a surface energy and slidingly contacts the sliding contact surface of the shaft member. Amended claim 2 also more clearly states that a sum of the surface energy of the seal member and the surface energy of the shaft member is 95 dyne/cm or less.

Claim Rejections – 35 USC §102

At page 2 of the Office Action, claims 1-2 were rejected under 35 U.S.C. §102(b) as being anticipated by JP 07077281. Applicant respectfully disagrees.

JP '281 is discussed in Applicant's specification in the "Description of the Related Art" portion of the "Background of the Invention" section. JP '281 pertains to a sealing structure of a gear device for rolling stock. JP '281 has an oil seal 2 around a gear shaft 1. A sliding contact part S has a steel circular member 11 pressure-inserted into the main body of the gear shaft 1. The sliding contact part S is surface hardened to a Vickers hardness of at least 1000 HV. Accordingly, JP '281 pertains to surface hardening of the steel circular member 11 which slidably contacts the oil seal 2 to purportedly reduce wear of the seal 2. Conversely, the present invention pertains to a shaft member having a sliding contact surface defined to have a surface energy of 50 dyne/cm or less for contact with the seal member, as claimed in claim 1.

One of the structural features of Applicant's claimed invention that distinguishes JP '281 is the claimed sliding contact surface having the claimed surface energy. Applicant submits that JP '281 does not inherently have Applicant's claimed sliding contact surface with a surface energy of 50 dyne/cm or less for contact with the seal member. An inherent feature (limitation) is one in which the natural result flowing from the operation as taught would result in the performance of the questioned function. *See, Scaltech, Inc. v. Retec/Tetra, LLC.*, 51 USPQ2d 1055, 1059 (Fed. Cir. 1999). Inherency of the feature (limitation) in the prior art is not established merely by probabilities or possibilities. *See, Id.* The mere fact that a certain thing may result from a given set of circumstances is not sufficient to establish inherency. *See, Id.* Because JP '281 pertains to surface hardening and not to surface energy, JP '281 does not inherently have a sliding contact surface having a surface energy of 50 dyne/cm or less for contact with the seal.

Furthermore, Applicant's invention is an improvement over JP '281. For example, prior art sealing structures having surface hardening on the shaft like JP '281 can have problems. For example, a large pressing force may be necessary for adequate sealing and wear to the seal member may increase due to the large pressing force. This is discussed in the specification in the last paragraph of the "Description of the Related Art" section. Furthermore, the present invention can overcome this problem by defining the surface energy. The present invention can

improve wear resistance and durability of the seal member even if there is a large pressing force on the seal. Also, it is not always necessary to increase the surface hardness of the shaft member according to the present invention.

Therefore, claim 1 is allowable.

Dependent claim 2 further defines the claimed invention as having a sum of the surface energy of the seal member and the surface energy of the shaft member being 95 dyne/cm or less. Again, JP '281 pertains to surface hardening of the sliding contact surface, not surface energy. Thus, claim 2 is also allowable. Even further, dependent claim 2 is allowable for the reasons that claim 1 is allowable.

Thus, Applicant submits that the §102 rejections should be withdrawn.

New Claim

New dependent claim 3 has been added. Claim 3 is supported by the application as originally filed. For example, see the specification at page 16, lines 9-12. Therefore, claim 3 does not include new matter.

Applicant submits claim 3 is also allowable.

CONCLUSION

For the foregoing reasons, Applicant submits that the patent application is in condition for allowance and requests a Notice of Allowance be issued.

Respectfully submitted,

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